

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 to 23 (canceled)

Claim 24. (currently amended) A smelting reduction method comprising:

(a) charging a carbonaceous material and an ore containing iron into a reacting furnace to directly contact the carbonaceous material and the ore;

(b) reducing the ore until at least a part of the ore is metallized, the resultant reduced ore containing at least a part of the metallized metal being produced, and devolatilizing the carbonaceous material until a devolatilized carbonaceous material having a volatile content of the carbonaceous material is less than 10% is obtained under the condition that the carbonaceous material and the ore are in direct contact with each other;

the step (b) of reducing the ore and devolatilizing the carbonaceous material comprising reducing the ore and devolatilizing the carbonaceous material at a temperature of at least 950°C in the reacting furnace;

(c) charging the devolatilized carbonaceous material and the ore containing at least a part of the metallized metal from step (b) into a smelting reduction furnace having a metal bath; and

(d) blowing a gas containing 20% or more of oxygen into the metal bath in the smelting reduction furnace to produce molten iron; and

(e) controlling a heat load of the furnace wall by using a relationship among a de-volatilizing degree of the carbonaceous material, a post combustion rate in the smelting reduction furnace and the heat load of the furnace wall, the post combustion rate being a gas oxidation degree measured at the throat of the smelting reduction furnace, the gas oxidation degree being defined as follows: gas oxidation degree in
% = { (CO₂+H₂O) / (CO+CO₂+H₂+H₂O) } x 100.

Claim 25. (currently amended) The method of claim 24, further comprising charging carbonaceous material and pre-reduced ore into the metal bath of the smelting reduction furnace.

Claim 26. (previously presented) The method of claim 24, wherein the carbonaceous material charged into the reacting furnace is in an amount which is stoichiometrically sufficient for reducing and metallizing all of the ore charged into the reacting furnace.

Claim 27. (previously presented) The method of claim 24, wherein the reacting furnace is a rotary kiln furnace or a rotary hearth furnace.

Claims 28 to 37 (canceled).

Claim 38. (currently amended) The method claim 25, wherein the carbonaceous material charged into the smelting reduction furnace is in an amount which is stoichiometrically sufficient

for reducing and metallizing all of the ore charged into the smelting reduction furnace.

Claim 39. (previously presented) The method of claim 38, wherein the reacting furnace is a rotary kiln furnace.

Claim 40. (previously presented) The method claim 38, wherein the reacting furnace is a rotary hearth furnace.

Claim 41. (previously presented) The method claim 24, wherein the carbonaceous material comprises char generated by devolatilizing coal.

Claim 42 (canceled).

Claim 43. (currently amended) The method of claim ~~[[42]]~~ 24, wherein the temperature is 950°C.

Claim 44. (currently amended) The method of claim ~~[[42]]~~ 24, wherein the temperature is 1,000°C.

Claim 45. (currently amended) The method of claim ~~[[42]]~~ 24, wherein the temperature is 1,200°C.

Claim 46. (currently amended) The method of claim ~~[[42]]~~ 24, wherein the temperature is 1,250°C.

Claim 47. (previously presented) The method of claim 24, wherein the step (b) of reducing the ore comprises reducing the ore until the ore has a metallization of 60% or more.

Claim 48. (currently amended) The method of claim 24, ~~wherein the melting furnace has a throat, whereat a combustion from CO to CO₂ and H₂ to H₂O occurs~~~~[[,]]~~ the method further comprising controlling ~~the~~ a post combustion in the smelting reduction furnace to achieve a post combustion rate of 30 to 95%, the post combustion rate being a gas oxidizing degree of 40 to ~~[[80%]]~~ measured at the throat of the smelting reduction furnace, the gas oxidation degree being defined as follows:

gas oxidizing degree in % = $\{(\text{CO}_2 + \text{H}_2\text{O}) / (\text{CO} + \text{CO}_2 + \text{H}_2 + \text{H}_2\text{O})\}$
X 100.

Claim 49. (New) The method of claim 48, wherein the post combustion rate is 40 to 80%.

Amendments to the Drawings:

In reply to the NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW enclosed with the Office Action of August 19, 2003, submitted concomitantly herewith are 24 replacement drawing sheets for Figs. 1A, 1B, 2A, 2B and 3 to 26, which replace all the originally filed drawings.

The attached replacement drawing sheets include changes to the drawing sheets for Figs. 2A and 2B, Fig. 17, Fig. 20, Fig. 21 and Fig. 24.

In the drawing sheet for Figs. 2A and 2B, the "arrow" between Fig. 2A and 2B has been deleted.

In Fig. 17, at the middle of the drawing sheet, "OPERATIONG" was replaced with --OPERATING--.

In Fig. 20, "%" was deleted after "[S]% IN METAL" and after "[C]% IN METAL."

In Fig. 21 and Fig. 22, at the middle of each drawing, "PNEWMATIC" was replaced with --PNEUMATIC--.

Attachments: 24 replacement drawing sheets

5 annotated drawing sheets showing changes